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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,097	05/30/2006	Mitsuru Ueda	36856.1440	1870

54066 7590 08/25/2009  
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EXAMINER
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CHEN, XIAOLIANG

ART UNIT	PAPER NUMBER
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2841

NOTIFICATION DATE	DELIVERY MODE
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08/25/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/596,097	<b>Applicant(s)</b> UEDA ET AL.	
	<b>Examiner</b> XIAOLIANG CHEN	<b>Art Unit</b> 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 8-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5-30-06, 9-19-07, 2-27-08, 1-26-09</u> .                      | 6) <input type="checkbox"/> Other: _____                          |



## **DETAILED ACTION**

### ***Preliminary Amendment***

1. The Preliminary Amendment filed on 05-30-06.
2. Claims 1-7 are canceled.
3. Claims 8-20 are added.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 9, 15 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9 and 15 recite the limitation "the coil conductor" in line 3. There is insufficient antecedent basis for this limitation in the claim. There is no limitation "a coil conductor" anywhere before in this independent claim.

For examining purpose only, read as "a coil conductor".

Claim 19 recites the limitation "the spiral coil" in line 2. There is insufficient antecedent basis for this limitation in the claim. There is no limitation "a spiral coil" anywhere before in this independent claim.

For examining purpose only, read as "a spiral coil".

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 8, 10, 14 and 16 are rejected under 35 U.S.C. 102(d) as being anticipated by Sakai (US20010026435).

**Re Claim 8**, Sakai show and disclose

A laminated ceramic electronic component comprising:

a plurality of ceramic sheets (the ceramic green sheets are laminated together [0017]), each including an internal conductor pattern (26, fig. 2) having a first land at one end of the internal conductor pattern (end portion of 26, for connecting via-hole conductor 25, fig. 2) and a second land at the other end (another end portion of 26, connecting land 29, fig. 1 and fig. 2) and having a via hole (via hole of 25, fig. 1) provided therein, the plurality of ceramic sheets being laminated to define a laminate (the ceramic green sheets are laminated together [0017]); wherein

the via hole is filled with a conductive material (the conductive paste is filled into the through-hole [0025]);

the internal conductor patterns disposed on different ones of the plurality of ceramic sheets (fig. 2) are electrically connected to each other through the via

Art Unit: 2841

hole (the connecting land is positioned at an end of the line conductor, i.e., the end of the line conductor is connected to the via-hole conductor [0037]);

the first land is arranged so as to cover the via hole (fig. 1) and the first land provided in one of the plurality of ceramic sheets is electrically connected to the second land provided in another of the plurality of ceramic sheets through the via hole provided in the one ceramic sheet (the connecting land is positioned at an end of the line conductor, i.e., the end of the line conductor is connected to the via-hole conductor [0037]); and

the second land is larger than the first land (connecting land having a diameter greater than the diameter of the via-hole conductor [ABSTRACT]).

**Re Claim 10**, Sakai show and disclose

The laminated ceramic electronic component according to Claim 8, wherein the area of the second land is about 1.10 to about 2.25 times as wide as the area of the first land (fig. 1).

**Re Claim 14**, Sakai show and disclose

A manufacturing method for a laminated ceramic electronic component, comprising the steps of:

printing an internal conductor pattern (26, fig. 2, by printing, a line conductor is formed [0016]) having a first land at one end of the internal conductor pattern (end portion of 26, for connecting via-hole conductor 25, fig. 2) and a second land at the other end on the surface of a ceramic sheet (another end portion of 26, connecting land 29, on the ceramic green sheets [0017], fig. 1

Art Unit: 2841

and fig. 2,) having a hole (hole of 25, fig. 1) for a via hole (via hole 25, fig 2) formed therein by using a conductive material (the conductive paste is filled into the through-hole [0025]) such that the first land covers the hole for via hole;

filling the conductive material in the hole for the via hole (the conductive paste is filled into the through-hole [0025]); and laminating a plurality of ceramic sheets (the ceramic green sheets are laminated together [0017]) such that the first land in one of the plurality of ceramic sheets is electrically connected to the second land in another of the plurality of ceramic sheets through the via hole formed in the one of the plurality of ceramic sheets (the connecting land is positioned at an end of the line conductor, i.e., the end of the line conductor is connected to the via-hole conductor [0037]) to obtain a laminate (the ceramic green sheets are laminated together [0017]); wherein

the second land is larger than the first land (fig. 1).

**Re Claim 16, Sakai show and disclose**

The manufacturing method for a laminated ceramic electronic component according to Claim 14, wherein the area of the second land is about 1.10 to about 2.25 times as wide as the area of the first land (fig. 1).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2841

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 9, 11-13, 15 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai in view of Maeda et al. (US20050122699).

**Re Claim 9**, Sakai show and disclose

The laminated ceramic electronic component according to Claim 8, wherein the second land (29, fig. 1) extends from a projection plane of the first land (25) to a projection plane of the internal conductor pattern (26, fig. 2);

Sakai does not disclose

the internal conductor pattern being a coil conductor pattern,

Maeda et al. teaches a device wherein

the internal conductor pattern is a coil conductor pattern (spiral coil

[0042]),



Art Unit: 2841

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the coil conductor pattern as taught by Maeda et al. in the electronic device of Sakai, in order to form a coil conductor inside the laminate (Maeda et al., Para. [0002]).

**Re Claim 11**, Sakai show and disclose

The laminated ceramic electronic component according to Claim 8,  
Sakai does not disclose

wherein the internal conductors included on the plurality of ceramic sheets define a spiral coil.

Maeda et al. teaches a device wherein

the internal conductors included on the plurality of ceramic sheets define a spiral coil (spiral coil [0042]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the spiral coil conductor pattern as taught by Maeda et al. in the electronic device of Sakai, in order to form and define the shape of a spiral coil conductor inside the laminate (Maeda et al., Para. [0072]).

**Re Claim 12**, Sakai show and disclose

The laminated ceramic electronic component according to Claim 11,  
wherein terminal ends of the spiral coil define lead-out electrodes (27, fig. 2).

**Re Claim 13**, Sakai show and disclose

The laminated ceramic electronic component according to Claim 11,

Art Unit: 2841

Sakai does not disclose

two additional ceramic sheets which do not include any internal conductors disposed therein, one of the two additional ceramic sheets being disposed on an upper surface of the laminate, and the other of the two additional ceramic sheets being disposed on a lower surface of the laminate.

Maeda et al. teaches a device wherein

two additional ceramic sheets (top and bottom sheets, fig. 2) which do not include any internal conductors disposed therein (fig. 20, one of the two additional ceramic sheets being disposed on an upper surface of the laminate (fig. 2), and the other of the two additional ceramic sheets being disposed on a lower surface of the laminate (fig. 2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the additional ceramic sheets as taught by Maeda et al. in the electronic device of Sakai, in order to provide the external extension electrodes for the spiral coil conductor of laminated electronic device (Maeda et al., Para. [0005]).

**Re Claim 15**, Sakai show and disclose

The manufacturing method for a laminated ceramic electronic component according to Claim 14, wherein the second land (29, fig. 1) extends from a projection plane of the first land (25, fig. 1 and 2) to a projection plane of the internal conductor pattern (26, fig. 2);

Sakai does not disclose

Art Unit: 2841

the internal conductor pattern being a coil conductor pattern,

Maeda et al. teaches a device wherein

the internal conductor pattern is a coil conductor pattern (spiral coil [0042]),

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the coil conductor pattern as taught by Maeda et al. in the electronic device of Sakai, in order to form a coil conductor inside the laminate (Maeda et al., Para. [0002]).

**Re Claim 18,** Sakai show and disclose

The manufacturing method for a laminated ceramic electronic component according to Claim 14,

Sakai does not disclose

arranging the internal conductors on the plurality of ceramic sheets so as to define a spiral coil.

Maeda et al. teaches a device wherein

arranging the internal conductors on the plurality of ceramic sheets so as to define a spiral coil (spiral coil [0042]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the spiral coil conductor pattern as taught by Maeda et al. in the electronic device of Sakai, in order to form and define the shape of a spiral coil conductor inside the laminate (Maeda et al., Para. [0072]).

Art Unit: 2841

**Re Claim 19**, Sakai show and disclose

The manufacturing method for a laminated ceramic electronic component according to Claim 14, wherein terminal ends of internal conductor pattern define lead-out electrodes (27 fig. 2);

Sakai does not disclose

the internal conductor pattern being a coil conductor pattern,

Maeda et al. teaches a device wherein

the internal conductor pattern is a coil conductor pattern (spiral coil [0042]),

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the coil conductor pattern as taught by Maeda et al. in the electronic device of Sakai, in order to form a coil conductor inside the laminate (Maeda et al., Para. [0002]).

**Re Claim 20**, Sakai show and disclose

The manufacturing method for a laminated ceramic electronic component according to Claim 14,

Sakai does not disclose

providing two additional ceramic sheets which do not include any internal conductors printed therein; disposing one of the two additional ceramic sheets on an upper surface of the laminate; and disposing the other of the two additional ceramic sheets on a lower surface of the laminate.

Maeda et al. teaches a device wherein

Art Unit: 2841

providing two additional ceramic sheets (top and bottom sheets, fig. 2) which do not include any internal conductors printed therein (fig. 2); disposing one of the two additional ceramic sheets on an upper surface of the laminate (fig. 20; and disposing the other of the two additional ceramic sheets on a lower surface of the laminate (fig. 2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the additional ceramic sheets as taught by Maeda et al. in the electronic device of Sakai, in order to provide the external extension electrodes for the spiral coil conductor of laminated electronic device (Maeda et al., Para. [0005]).

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai in view of Niwa et al. (US4237606).

**Re Claim 17**, Sakai show and disclose

The manufacturing method for a laminated ceramic electronic component according to Claim 14,

wherein the internal conductor pattern is printed (26, fig. 2, by printing, a line conductor is formed [0016]) on a ceramic sheet having the hole (hole of 25, fig. 1) for a via hole (via hole of 25, fig 2) formed therein and the hole for the via hole is filled with a conductive material (the conductive paste is filled into the through-hole [0025]),

Sakai does not disclose

Art Unit: 2841

the printing and filling without providing a carrier film on a back surface of the ceramic sheet.

Niwa et al. teaches a device wherein

the printing (a pattern is printed on the green sheet according to a wiring pattern [col. 1, line 38]) and filling (the hole is filled with the electrically conductive paste [col. 1, line 43]) without providing a carrier film on a back surface of the ceramic sheet.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the printing and filling method as taught by Niwa et al. in the electronic device of Sakai, in order to simplify the printing and filling processes and reduce the cost of the electronic device.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US-20020139566 US-7155812 US-7289008 US-7149496 US-6224703 US-5910755 US-5834994 US-5525402 US-4991283 US-6767140 US-5401689 US-5060116 US-4521449 US-7200365 US-7190970 US-6563396 US-6329715 US-6611035 US-6198374 US-6175727.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAOLIANG CHEN whose telephone number is (571)272-9079. The examiner can normally be reached on 7:00-5:00 (EST), Monday-Thursday.

Art Unit: 2841

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800, ext 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xiaoliang Chen/  
Examiner, Art Unit 2841

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